

REMARKS

Summary of the Amendment

Upon entry of the present Amendment, Claims 14, 24 and 28 will have been amended. Accordingly, Claims 14-31 are currently pending. By the present Amendment and Remarks, Applicant submits that the rejections have been overcome and respectfully requests reconsideration of the outstanding Office Action and allowance of the present application.

Summary of the Office Action

In the subject Office Action, the Examiner has rejected 14 under 35 U.S.C. § 102(a) as being anticipated over Applicant's Admitted Art; and rejected 14-31 under 35 U.S.C. § 102(e) as being anticipated over art of record.

Traversal of Rejection Under 35 U.S.C. Section 102(a)

In re APA Rejection:

Applicant respectfully traverses the rejection of Claim 14 under 35 U.S.C. § 102(a) as being anticipated by the Applicant's Admitted Prior Art (APA) [hereinafter "APA"].

The Examiner submits that APA discloses a semiconductor package in Figure 1, comprising: a leadframe 51 comprising a plurality of leads 53 segregated into two sets, the leads 53 of each set being linearly aligned and arranged in spaced, generally parallel relation to each other such that each of the leads of one set extends in opposed relation to a respective one of the leads in the remaining set, each of the leads defining opposed, generally planar top 57 and bottom sides 58; a semiconductor chip 54 partially overlapping and attached to the top side 57 of at least one of the leads 53 of each of the sets, the semiconductor chip being electrically connected to at least one of the leads; and a sealing material 59 at least partially encapsulating the leadframe 51 and the semiconductor chip 54 such that the bottom side of each of the leads is exposed within the sealing material.

Applicant's Independent Claim 14

Independent Claim 14 as amended recites, *inter alia*, . . . *the semiconductor chip being electrically connected to a portion of the top side of at least one of the leads which is positioned below the top surface; and a sealing material at least partially encapsulating the leadframe and the semiconductor chip, the sealing material having opposed, generally planar upper and lower surfaces such that the bottom side of each of the leads is generally co-planar with the lower surface of the sealing material.*

On the other hand, Applicant notes that Figure 1 of the APA does not teach the aforementioned features. In particular, the showing of the semiconductor package 50 in Figure 1 does not teach that, *inter alia*, *the bottom side of each of the leads is generally co-planar with the lower surface of the sealing material.* As shown in Figure 1, only a small portion of the lead 53 is actually encapsulated by sealing material 59. In particular, it is clearly shown in Figure 1 of the APA that the portion of the lead 53 which is encapsulated, is positioned above the top surface of the paddle 52. Thus, that portion of the bottom side of the lead 53 which is encapsulated certainly is not co-planar with the lower surface of the sealing material or package body 59 since it is positioned above the top surface of the paddle 52.

Moreover, Applicant notes that Figure 2 of the APA does not teach, *inter alia*, . . . *the semiconductor chip being electrically connected to a portion of the top side of at least one of the leads which is positioned below the top surface;* . . . Rather, it is noted that the top side of the uppermost portion of the lead 62 to which the wire 66 extends is positioned above the top surface of the semiconductor chip 65. Therefore, Figure 2 does not teach the semiconductor chip 65 being electrically connected to at least one of the leads 62 at a portion of the top side of the lead 62 positioned below the top surface of the semiconductor chip 65.

Since Figures 1 and 2 of the APA fail to disclose the above-noted features of the present invention, Applicant submits that Figures 1 and 2 of the APA fail to disclose each and every recited feature of the present invention as recited in independent Claim 14.

Accordingly, Applicant submits that the Examiner has failed to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. Section 102(a) and that this rejection is improper and should be withdrawn.

In re LEE Rejection:

Applicant respectfully traverses the rejection of Claims 14-31 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,157,074 to Lee [hereinafter "LEE"].

With regard to Claim 14, the Examiner submits that LEE discloses a semiconductor package shown in Figures 5-7 comprising: a leadframe 1 comprising a plurality of leads 6/7 segregated into two sets, the leads of each set being linearly aligned and arranged in spaced, generally parallel relation to each other such that each of the leads of one set extends in opposed relation to a respective one of the leads of the remaining set, each of the leads defining opposed, generally planar top 6 and bottom sides 7, a semiconductor chip 3 partially overlapping and attached to the top side of at least one of the leads 6 of each of the sets, the semiconductor chip being electrically connected to at least one of the leads; and a sealing material 13 at least partially encapsulating the leadframe 1 and the semiconductor chip 3 such that the bottom side of the leads 7 is exposed within the sealing material.

With regard to Claims 24 and 28, the Examiner submits that LEE discloses a leadframe 1 as shown in Figure 5 comprising a peripheral tie bar 2, and a plurality of leads 6/7 connected to the tie bar 2 and segregated into two sets (Figure 7); the leads of each set being linearly aligned and arranged in spaced, generally parallel relation to each other (Figure 7) such that each of the leads of one set extends in opposed relation to a respective one of the leads of the remaining set, each of the leads defining opposed, generally planer top and bottom sides; an inner end 6; and a notched surface 9 which is disposed in opposed relation to the bottom side (for Claim 24) or top side (for Claim 28) and extends to the inner end; each of the leads having a thickness between the top and bottom sides which exceeds a second thickness between the bottom side and the notched surface 9 (Figure 7).

A Review of Lee

As shown in Figures 5-7, LEE discloses a leadframe 1 which includes a plurality of tie bars 2 extended toward a center from edges of the leadframe 1 and a die pad 4 coupled with the tie bars 2 to be supported by the tie bars 2. A semiconductor chip 3 can be bonded on the die pad 4. A plurality of inner leads 6 are disposed around the die pad 4 and electrically coupled with bonding pads 5 of the chip 3 by means of wire bonding. A plurality

of outer leads 7 are coupled to the inner leads 6 so that they can be exposed outside a mold body 13. A dambar 8 is formed between the inner leads 6 and the outer leads 7. The inner leads 6, the tie bars 2, and the die pad 4 are preferably disposed on the same plane as one another. As shown in Figure 6, coining is performed at each inner lead 6 to form a step or a coined surface 9. An insulating member 11 is attached to the inner leads 6 and has the same height as epoxy 12 doped on the die pad 4 during the packaging process.

In re Independent Claim 14 (and Dependent Claims 15-23)

Independent Claim 14 as amended recites, *inter alia*, . . . *the bottom side of each of the leads is generally co-planar with the lower surface of the sealing material.*

Applicant notes that LEE does not teach or even suggest the aforementioned features recited in independent Claim 14. Figures 6 and 7 of LEE clearly show that leads 6/7 do not have a bottom side which is co-planar with the bottom surface of the package body 13. Since LEE fails to disclose the above-noted features of the present invention, Applicant submits that LEE fails to disclose each and every recited feature of the present invention as recited in independent Claim 14.

Accordingly, Applicant submits that the Examiner has failed to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. Section 102(e) and that this rejection is improper and should be withdrawn.

Further, Applicant submits that dependent Claims 15-23 are allowable at least for the reason that these claims depend from allowable independent Claim 14 and because these claims recite additional features that further define the present invention.

Accordingly, Applicant requests that the Examiner reconsider and withdraw the rejection of dependent Claims 15-23 under 35 U.S.C. Section 102(e) and indicate that these claims are allowable.

In re Independent Claims 24 and 28 (and Dependent Claims 25-27 and 29-31)

Applicant's independent Claims 24 and 28 as amended recite, *inter alia*, . . . *a plurality of leads extending from the tie bar in isolation from each other and segregated into two sets, the leads of each set being linearly aligned and arranged in spaced, generally*

parallel relation to each other such that each of the leads of one set extends in opposed relation to a respective one of the leads of the remaining set. . . .

First, the manner in which the Examiner states the aforementioned rejection with respect to the teachings of LEE appears to be inappropriate. As stated above, the Examiner contends that a plurality of leads 6/7 are connected to the tie bar 2. However, an inspection of Figure 5 reveals that there are absolutely no leads connected to the LEE tie bar 2. For this reason alone, the Examiner's aforementioned rejection is flawed. In particular, since LEE fails to disclose the above-noted features of the present invention, Applicant submits that LEE fails to disclose each and every recited feature of the present invention as recited in independent Claims 24 and 28.

Accordingly, Applicant submits that the Examiner has failed to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. Section 102(e) and that this rejection is improper and should be withdrawn.

Furthermore, even assuming, arguendo, that the Examiner has indicated that dambar 8 would be equivalent to Applicant's tie bar (71A, 85A, or 105A); in this scenario, the LEE reference still does not anticipate the invention Applicant claims in independent Claims 24 and 28.

For instance, if the LEE leads 6 were considered to read on the plurality of leads recited in independent Claims 24 and 28, this interpretation in light of the LEE teaching still does not anticipate Claims 24 or 28. In particular, in this scenario, the LEE reference does not teach, inter alia, . . . *a plurality of leads extending from the tie bar in isolation from each other and segregated into two sets, the leads of each set being linearly aligned and arranged in spaced, generally parallel relation to each other such that each of the leads of one set extends in opposed relation to a respective one of the leads of the remaining set, . . .* Rather, in this scenario, none of the LEE inner leads 6 are truly oriented in a generally parallel fashion. *Rather, the LEE leads 6 have various elbow features and curved leg portions that are arranged to converge towards the die pad 4.*

And even though the LEE leadframe 1 shown in Figure 5, may teach a plurality of leads 7 connected to a tie bar 8 that could be construed as being segregated into two sets (i.e., a left set of leads 7 and a right set of leads 7), wherein the leads 7 of each set could be construed as being linearly aligned and arranged in spaced, parallel relation to each other,

such that the leads of one set extend in opposed relation to a respective one of the leads 7 of the remaining set, in this scenario, the LEE reference still does not teach, *inter alia*, . . . *leads extending from the tie bar in isolation from each other*. . . . In this regard, the inner ends of the leads 7 in LEE are each connected to the common dam bar 8, and thus are interconnected to each other.

Thus, LEE does not teach, *inter alia*, . . . *a plurality of leads extending from the tie bar in isolation from each other and segregated into two sets, the leads of each set being linearly aligned and arranged in spaced, generally parallel relation to each other such that each of the leads of one set extends in opposed relation to a respective one of the leads of the remaining set*. . . , as is recited in independent Claims 24 and 28.

For the foregoing reasons, and because LEE fails to disclose the above-noted features of the present invention, Applicant submits that LEE fails to disclose each and every recited feature of the present invention as recited in independent Claims 24 and 28.

Accordingly, Applicant submits that the Examiner has failed to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. Section 102(e) and that this rejection is improper and should be withdrawn.

Furthermore, Applicant submits that dependent Claims 25-27 and 29-31 are allowable at least for the reason that these claims depend from allowable independent Claims 24 and 28 and because these claims recite additional features that further define the present invention.

Accordingly, Applicant requests that the Examiner reconsider and withdraw the rejection of the dependent Claims 25-27 and 29-31 under 35 U.S.C. Section 102(e) and indicate that these claims are allowable.

Application is Allowable

Applicant respectfully submits that each and every pending claim of the present application meets the requirements for patentability under 35 U.S.C. §§ 112, 102, and 103 and respectfully requests that the Examiner indicate the allowance thereof.

CONCLUSION

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in combination thereof, anticipate or render obvious Applicant's invention as recited in Claims 14-31. The claims have been amended to eliminate any arguable basis for rejection under 35 U.S.C. Sections 102(a) and (e). In addition, the applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Further, any amendments to the claims which have been made in this response and which have not been specifically noted to overcome a rejection based on the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

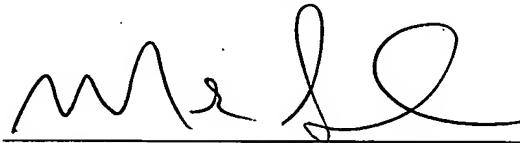
Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein is respectfully requested and now believed to be appropriate.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

Date: 12/2/04

By:



Customer No.: 007663

Mark B. Garred
Registration No. 34,829
STETINA BRUNDA GARRED & BRUCKER
75 Enterprise, Suite 250
Aliso Viejo, California 92656
Telephone: (949) 855-1246
Fax: (949) 855-6371